Amendments to the Claims:

Please amend the claims as follows:

Claim 1 (Previously presented): A method for electrosurgically sealing tissue, comprising the steps of:

applying a first pulse of RF energy to the tissue; and

applying at least one subsequent RF energy pulse to the tissue and keeping constant or varying RF energy parameters of individual pulses of subsequent RF energy pulses in accordance with at least one characteristic of an electrical transient that occurs during the individual RF energy pulses.

Claim 2 (Previously presented): A method as in claim 1, wherein the step of applying the first pulse includes a step of selecting characteristics of the first pulse so as not to excessively heat the tissue.

Claim 3 (Previously presented): A method as in claim 1, wherein the step of applying the first pulse comprises the steps of:

continuously measuring at least one characteristic of a response of the tissue to the applied first pulse; and

in accordance with the measured characteristic, determining whether to change a set of RF energy parameters to a default set of RF energy parameters.

Claim 4 (Previously presented): A method as in claim 3, wherein the default set of RF energy parameters includes parameters selected from the group consisting of a magnitude of a starting power, a magnitude of a starting voltage, a magnitude of a starting current, and pulse width.

Claim 5 (Previously presented): A method as in claim 1, wherein the electrical transient is selected from the group consisting of an electric current transient and tissue impedance.

Claim 6 (Previously presented): A method as in claim 1, wherein the at least one characteristic of the electrical transient is selected from the group consisting of a rate of change of an electric current transient, a rate of change of the tissue impedance, and phase rotation of voltage and current.

Claim 7 (Previously presented): A method as in claim 1, wherein the at least one characteristic is selected from the group consisting of a current value, a voltage value, a current phase angle, and a tissue impedance value.

Claim 8 (Previously presented): A method as in claim 1, wherein the RF energy parameters that are varied for individual pulses of the first and the at least one subsequent RF energy pulses are selected from the group consisting of RF power output, current, voltage, pulse width and duty cycle.

Claim 9 (Previously presented): A method as in claim 1, further comprising the step of determining if the tissue responded to the first pulse of RF energy prior to the step of applying at least one subsequent RF energy pulse.

Claim 10 (Previously presented): A method as in claim 9, wherein the step of applying at least one subsequent RF energy pulse includes the step of varying at least one of RF starting power, a magnitude of starting current, pulse width, and a magnitude of starting voltage for the at least one subsequent RF energy pulse.

Claim 11 (Previously presented): A method as in claim 1, further comprising the steps of:

measuring the at least one characteristic of the electrical transient that occurs at the end of at least the first pulse and the at least one subsequent RF energy pulse;

in accordance with the measured characteristic, determining whether to terminate the method for electrosurgically sealing tissue, or using the measured characteristic to determine a set of RF energy parameters for a subsequent RF energy pulse and repeating the applying step.

Claim 12 (Previously presented): A method as in claim 11, wherein the set of RF energy parameters for the subsequent RF energy pulse comprise a magnitude of a starting RF power, a magnitude of a starting current, a magnitude of a starting pulse width, a magnitude of a starting voltage, and a duty cycle.

Claim 13 (Previously presented): A method as in claim 11, wherein the electrical transient is an electrical impedance of the tissue.

Claim 14 (Previously presented): A method as in claim 13, wherein the step of using the measured characteristic to determine the set of RF energy parameters for the at least one subsequent RF energy pulse comprises a step of using the measured impedance value to readout the set of RF energy parameters from an entry in one of a plurality of lookup tables.

Claim 15 (Previously presented): A method as in claim 14, wherein said one of the plurality of lookup tables is selected manually or automatically, based on a choice of an electrosurgical tool or instrument.

Claim 16 (Previously presented): A method as in claim 3, further comprising the step of modifying predetermined parameters of the set of RF energy parameters in accordance with a control input from an operator.

Claim 17 (Previously presented): A method as in claim 1, further comprising the step of combining an RF energy pulse with the at least one subsequent RF energy pulse.

Claim 18 (Previously presented): A method as in claim 1, further comprising the step of terminating a generation of the at least one subsequent RF energy pulse upon a determination that the electrical transient is absent.

Claim 19 through 27 (Canceled).

Claim 28 (Previously presented): A system for electrosurgically sealing tissue comprising:

means for applying a first pulse of RF energy to the tissue; and

means for applying at least one subsequent RF energy pulse to the tissue and keeping constant or varying RF energy parameters of individual pulses in accordance with at least one characteristic of an electrical transient that occurs during the individual RF energy pulses.

Claim 29 (Previously presented): A system as in claim 28, wherein the means for applying the first pulse includes means for selecting characteristics of the first pulse so as not to excessively heat the tissue.

Claim 30 (Previously presented): A system as in claim 28, wherein the means for applying the first pulse comprises:

means for continuously measuring at least one characteristic of a response of the tissue to the applied first pulse; and

means for determining whether to change a set of RF energy parameters, in accordance with the measured characteristic.

Claim 31 (Previously presented): A system as in claim 30, wherein the default set of RF energy parameters includes parameters selected from the group consisting of a magnitude of a starting power, a magnitude of a starting voltage, a magnitude of a starting current, and pulse width.

Claim 32 (Previously presented): A system as in claim 28, wherein the electrical transient is selected from the group consisting of an electric current transient and tissue impedance.

Claim 33 (Previously presented): A system as in claim 28, wherein the at least

one characteristic of the electrical transient is selected from the group consisting of a rate of change of an electric current transient, a rate of change of the tissue impedance, and phase rotation of voltage and current.

Claim 34 (Previously presented): A system as in claim 28, wherein the at least one characteristic is selected from the group consisting of a current value, a voltage value, a current phase angle, and a tissue impedance value.

Claim 35 (Previously presented): A system as in claim 28, wherein the RF energy parameters that are varied for individual pulses of the RF energy pulses are selected from the group consisting of RF power output, current, voltage, pulse width and duty cycle.

Claim 36 (Previously presented): A system as in claim 28, further comprising means for determining if the tissue responded to the first pulse of RF energy prior to activating the means for applying at least one subsequent RF energy pulse.

Claim 37 (Previously presented): A system as in claim 36, wherein the means for applying at least one subsequent RF energy pulse includes means for varying at least one of RF starting power, a magnitude of starting current, pulse width, and a magnitude of starting voltage for the at least one subsequent RF energy pulse.

Claim 38 (Previously presented): A system as in claim 28, further comprising:

means for measuring the at least one characteristic of the electrical transient that occurs at the end of the first pulse and subsequent RF energy pulses;

means for determining whether to terminate the system for electrosurgically sealing tissue, in accordance with the measured characteristic; and

means for using the measured characteristic to determine a set of RF energy parameters for a subsequent RF energy pulse if the means for determining determines not to terminate the system for electrosurgically sealing tissue.

Claim 39 (Previously presented): A system as in claim 38, wherein the set of RF energy parameters for the subsequent RF energy pulse comprise a magnitude of a starting RF power, a magnitude of a starting current, a magnitude of a starting pulse width, a magnitude of a starting voltage, and a duty cycle.

Claim 40 (Previously presented): A system as in claim 38, wherein the electrical transient is an electrical impedance of the tissue.

Claim 41 (Previously presented): A system as in claim 40, wherein the means for using the measured characteristic to determine the set of RF energy parameters for the subsequent RF energy pulse comprises means for using the measured impedance value to readout the set of RF energy parameters from an entry in one of a plurality of lookup tables.

Claim 42 (Previously presented): A system as in claim 41, wherein said one of the plurality of lookup tables is selected manually or automatically, based on a choice of an electrosurgical tool or instrument.

Claim 43 (Previously presented): A system as in claim 30, further comprising means for modifying predetermined parameters of the set of RF energy parameters in accordance with a control input from an operator.

Claim 44 (Previously presented): A system as in claim 28, further comprising means for combining an RF energy pulse with at least one subsequent RF energy pulse.

Claim 45 (Previously presented): A system as in claim 28, further comprising means for terminating a generation of subsequent RF energy pulses upon a determination that the electrical transient is absent.

Claim 46 (New): A method for electrosurgically sealing tissue, comprising the steps of:

applying a first pulse of RF energy to the tissue; and

applying at least one subsequent RF energy pulse to the tissue and keeping constant or varying RF energy parameters of individual pulses of subsequent RF energy pulses in accordance with at least one characteristic of an electrical transient that occurs during the individual RF energy pulses, wherein the at least one characteristic that controls the variation of the pulse parameters is a width of the electrical transient, the width occurring at an initial state of each subsequent RF energy pulse.